Chapter 4: Team Coordination and Risk Management

Overview

Introduction

This chapter addresses human error and risk decision-making. Both greatly affect the safety of boat operations. Human error has been and continues to be a significant cause of boat mishaps. Ineffective risk decisions many times have placed the boat and crew at greater risk than necessary. Technical knowledge and skill alone cannot prevent mishaps. It also takes teamwork that minimizes, recognizes, and corrects human errors and a systematic process to continuously assess and manage safety risks.

Prudent seamen have exhibited and human factors researchers have described seven critical skills that reduce the potential for human error-induced mishaps. Within these skills are important processes that serve to control safety risks and improve team performance. These critical skills are collectively titled "Team Coordination". The processes are risk management, crew briefing, and crew debrief.

This chapter mandates the use of team coordination, risk management, crew briefing, and crew debrief as part of standard boat operations. It describes the skills, performance standards for each, coxswain responsibilities and training requirements. It also describes the risk management, crew briefing and crew debrief processes. **To promote these skills and processes, performance in team coordination shall be assessed as part of crew debriefs, Ready For Operations inspections, and Standardization Team visits**.

In this chapter

This chapter contains the following information:

Section A. Team Coordination

Overview

Introduction

Team is a collection of people, that uses the technical abilities of its members to achieve a common mission. This chapter discusses how team coordination can control:

- human error,
- manage safety risks,
- and provide directions for continuous improvement in team performance.

In this section

This section contains the following information:

Team Relationship

A.1. The larger team

The boat consisting of the coxswain and crew is a team. But it also is a part of a larger team. Boats seldom perform missions without interacting with other people. Members of this larger team are:

- the mission coordinator (the officer-in-charge or duty officer),
- other assigned Coast Guard assets (aircraft, boats, and cutters),
- other government, commercial and private parties (federal, state, and local officials,
- commercial salvagers, and Good Samaritans, as well as
- the "customer. "

In this case, the customer is the person or vessel which is the focus of the mission. The mission is the reason for getting the boat underway.

A.2. Coxswain

The coxswain wears two hats as:

1. the person-in-charge of the boat team, and
2. as the member of the larger team.

Because the majority of boat missions have inherent safety risks, effective coordination of the boat team and the larger team is a cornerstone for mishap prevention.

Team Coordination and Risk Management

A.3. General

Team coordination is like having a set of tools that if properly used can:

- control human error,
- manage safety risks, and
- provide direction for continuous improvement in team performance.

Proper use requires team members, the coxswain and boat crew, to routinely use all seven team coordination skills all the time. The skills are the good habits of exemplary leaders. They have been tested within complex missions, under ever changing conditions, and when crew stress and safety risks were high. Like the navigational rules of the road, when team coordination and risk management is properly used, an adequate safety margin for mission operations can be maintained.

A.4. Seven team skills

The seven team coordination skills are:

Skill	Description
Leadership	• Directing and guiding the activities on the boat, • stimulating the crew to work together as a team, and • providing feedback to the crew regarding their performance.
Mission Analysis	• Making plans, • managing risks, • organizing and briefing the crew, • assigning tasks, and • monitoring mission effectiveness, including debriefing the crew.
Adaptability And Flexibility	• Altering a course or action to meet changing demands, • managing stress, workload and fatigue to maintain an optimal performance level, and • working effectively with others.

Skill	Description
Situation Awareness	Knowing at all times what is happening to: • the boat, • the coxswain and crew, and • the mission.
Decision-Making	Applying logical and sound judgment based on the available information.
Communication	Clearly and accurately sending and acknowledging information, instructions and commands, as well as providing useful feedback.
Assertiveness	• Actively participating in problem-solving, by stating and maintaining a position until convinced by the facts that your position is wrong. • Speaking up and/or taking action when appropriate.

Section B. Team Coordination Standards

Overview

Introduction

Team Coordination Standards identify expected behaviors among:

- the mission coordinator,
- coxswain, and
- crew

necessary to affect safe mission performance. These standards represent the expected performance in all missions.

Coxswain responsibilities

Coxswain responsibilities represent the minimum required actions of a coxswain to achieve team coordination and risk management.

These standards and responsibilities shall be evaluated as part of crew debriefs, Ready For Operations (RFO) inspections and Standardization Team visits.

In this section

This section contains the following information:

Leadership Standard

B.1. Standards of leadership

The standards of leadership are:

- The boat crew respects each other. The climate is an open one, the crew is free to talk and ask questions about the mission.
- Regardless of assigned duties, the individual with the most information about the situation-at-hand is allowed to participate in mission decisions.
- When disagreements arise, the coxswain and crew directly confront the issues over which the disagreements began.
- The primary focus is on solutions to problems. The solutions are generally seen as reasonable. Problem resolution ends on a positive note with very little grumbling among the coxswain and crew.

B.2. Coxswain responsibilities

The coxswain shall:

- Be in charge and give clear and understandable direction to the boat crew.
- Monitor crew safety and progress. If unable to monitor safety, shall designate a safety observer.
- Balance and monitor crew workload and manage crew stress.
- Remain approachable and open to ideas and suggestions.
- Update the crew on significant mission changes.
- Provide to the crew timely, constructive feedback on performance.
- Provide to the mission coordinator timely updates on boat status.

Mission Analysis Standard

B.3. Mission analysis procedure

The following procedures outlines the steps involved in mission analysis.

Step	Procedure
1	The mission coordinator, coxswain, and crew know the mission objective.
2	The mission coordinator and coxswain discuss a plan for the mission.
3	Potential problems are briefly discussed.
4	Time is taken to: • assess risks, • eliminate unnecessary ones, and • reduce unacceptable risks.
5	The crew is briefed on the plan and may provide suggestions.
6	Mission tasks are assigned to specific individuals.
7	Contingency planning is done by the mission coordinator and coxswain.
8	As additional information becomes available, the plan is updated.
9	Some discussion takes place to clarify actions in the event of unexpected problems.
10	The coxswain reviews crew actions and conducts a debrief of the mission.
11	Strengths and weaknesses are identified; remedial actions are assigned to improve future performance.

B.4. Coxswain responsibilities

The coxswain shall:

- Discuss mission objectives and hazards with the mission coordinator as part of planning before getting underway. Understand level of risk that the mission has and how much risk the coxswain is authorized to take.
- Take no unnecessary risks and have contingencies to deal with unacceptable risks.
- Brief the crew on mission objectives and the plan. Permit open discussion to ensure that tasks are understood and crew ideas are considered.
- Update plans based on changes in the situation and/or mission objectives.
- Debrief the crew on mission performance; identify areas for improvement.

Adaptability and Flexibility Standard

B.5. Adaptability and flexibility standard

The following describe the standards for adaptability and flexibility necessary for mission analysis.

- Most distractions are avoided. The crew polices each other for fixation; takes positive action to regain situation awareness.
- The coxswain can decide what information and activities are mission essential. Most nonessential information is set aside.
- Crew tasks are prioritized to ensure safe performance. The boat crew is aware of each others' workload. When a crew member appears overloaded, the workload is redistributed.
- The mission coordinator and coxswain are alert to possible crew fatigue, complacency, or high stress.

B.6. Coxswain responsibilities

The coxswain shall:

- Remain aware of own stress and own hazardous thought patterns. Take positive action to counter subconscious tendencies to react to the excitement of the moment or arbitrarily discard information that conflicts with own perceptions.
- Implement cross checks of coxswain and crew actions to combat the affects of fatigue for night missions or those that extend time awake beyond 18 hours.
- Remain alert to the effects of complacency and high stress on the crew. Take positive action to manage crew stress.
- Remain alert to work overload within the crew and redistribute work as necessary.
- Notify the mission coordinator if the physiological condition of the crew becomes a safety concern.

Situation Awareness Standard

B.7. Situation awareness procedure

The following procedure describe the steps involved in situation awareness.

Step	Procedure
1	The coxswain provides the mission coordinator and the crew with mission status (e.g., current operations and/or perceived location).
2	Changes to situation awareness are verbalized.
3	The crew or mission coordinator recognizes that a risk decision or action must be made and offers suggestions or information to the coxswain. The mission coordinator serves as a check of the coxswain's risk decisions.
4	If the mission coordinator perceives the boat or crew is taking unacceptable risks, positive action is taken to control the situation (e.g., stopping or slowing boat activities and/or providing additional assets).
5	The boat crew checks each other's task performance for errors. Anyone who makes a mistake is informed and makes needed corrections.
6	The coxswain maintains an effective lookout.

B.8. Coxswain responsibilities

The coxswain shall:

- Not get underway without an understanding of the mission objective, the known risks, and a plan of action.
- Ensure that the crew understands the mission plan, assigned tasks.
- Remain alert to mistakes in planning and crew errors. Likewise empower the crew to double check coxswain decisions and actions.
- Remain vigilant to changes in the situation. Remain alert to conflicting or ambiguous information that may indicate that the perceived situation is different than the actual one.
- Periodically update the mission coordinator and the crew as to the perceived situation.

Decision-Making Standard

B.9. General

The following points reflect the standards of decision-making:

- Coxswain decisions reflect a willingness to use available information from all sources.
- Most decisions are timely, but may be affected by stress.
- Most decisions are appropriate for the situation; however the crew may overlook options or discount risk.
- The boat crew does not exhibit hazardous thought patterns (e.g., anti-authority, invincibility, impulsiveness, machismo, or resignation).
- Before the coxswain decides and implements a change in objective, the situation may worsen; however, mission accomplishment is not affected and no loss occurs.

B.10. Coxswain responsibilities

The coxswain shall:

- Assess current situation and available information to determine ability to meet mission objectives.
- Make use of available time to develop contingencies or alternative courses of actions.
- Consciously weigh the risks versus the gain. Implement the best contingency or action to address the situation.
- Monitor the situation to ensure that the decision produced the desired outcome.

Communication Standard

B.11. General

The following items reflect the standards of communication for a boat crew team.

- The boat crew and mission coordinator communicate about the mission as required. Standard terminology is used.
- Receivers acknowledge messages. Receivers ask questions when they do not understand.
- Senders usually pursue confirmation when no response is forthcoming and the message is important.
- When changes to crew tasks occur, all hands are aware. The coxswain states risk decisions to the mission coordinator and crew and as time permits informs the crew of the reasons and any adjustments they have to make.
- The mission coordinator and crew acknowledges their awareness of the risk decisions. Anyone may ask mission-related questions to clarify information.

B.12. Coxswain responsibilities

The coxswain shall:

- Use standard terminology in giving commands to the crew and in conducting external communications.
- Ensure that information and orders conveyed to the crew are acknowledged by the intended receiver.
- Communicate intentions associated with risks to the mission coordinator and the crew.

Assertiveness Standard

B.13. General

The following standards reflect the assertiveness necessary for each member of the boat crew team.

- The mission coordinator, coxswain and/or crew occasionally raise questions about the plan or actions when they are either in doubt, or when they believe the boat is standing into danger. Most of these questions are relevant to risk decision-making.
- The coxswain alerts the crew or mission coordinator when input is needed to make risk decisions.
- The crew or mission coordinator responds to the coxswain's request with pertinent, brief, and timely information. Everyone remains open to questions about the mission.
- Suggestions are listened to without criticism.
- Requests for task assistance are made when overloaded.

B.14. Coxswain responsibilities

The coxswain shall:

- Speak up when an error or poor judgment is perceived.
- Notify the mission coordinator when the coxswain perceives either: the level of risk has changed; the mission is beyond the capabilities of the boat; or the crew has become overloaded or overly fatigued.
- Encourage input and feedback from the crew.
- Treat questions and concerns of the crew with respect.

Section C. Risk Management Process

Overview

Introduction

Risk management shall be performed during the planning and execution of missions. Risk management is an element of the mission analysis skill and is a process to identify and control unacceptable safety risks. Every mission event (getting underway, transit, on scene operations, mooring) has some level of risk and not all the risks are known. Every event requires that risks are kept within controls (safeguards) that have been designed to handle them.

Examples of these controls includes the proper use of installed communications and navigation systems and proper execution of operating procedures. Effective risk management is highly dependent upon technical knowledge and experience.

In this section

This section will contain the following information:

Four Rules of Risk Management

C.1. General

To use the risk management process correctly the team must follow these four rules.

C.2. Rule #1

Integrate risk management into mission planning and execution.

- Risk management is an iterative and continuous process.
- Risk management is most effective when it is proactive. It requires that when new information on risks are received, the ability to control those risks are reviewed. It requires the coxswain and crew to remain vigilant and think safety until the boat is secured and the mission is over.

C.3. Rule #2

Accept no unnecessary risks.

- Unnecessary risk does not contribute to the safe accomplishment of the mission. It is operating beyond the known capabilities of the crew and/or boat without considering other alternatives.
- Unnecessary risks are often taken when decision makers rationalize that the boat is the only alternative or that urgency is more important than safety.
- Unnecessary risk taking constitutes gambling with lives, government, and private property

C.4. Rule #3

Make risk decisions at the appropriate level. Many times mishaps occur because the level of risk is not perceived by an individual.

- Understanding of risk is highly dependent upon technical knowledge and expertise; therefore, risk decisions must be made by clear-thinking, technically competent people with an understanding of the situation.
- The mission coordinator and coxswain should work as a team in making risk decisions.

C.5. Rule #4

Accept risks if benefits outweigh costs. Eliminating unnecessary risk, leaves risk that is either acceptable or unacceptable for mission accomplishment.

- Who owns the mission owns the risk.
- In some cases mission directives outline what is acceptable (like sustaining personnel injury and equipment damage to save lives). However in high stress situations, the line between acceptable and unacceptable may become fuzzy.
- Again, clear-thinking, technically competent people with an understanding of the situation must be involved in the risk decision.
- Again, the mission coordinator and coxswain should work as a team in making risk vs. gain decisions

Risk Management Process, Step 1

C.6. General	Continuous risk management during the course of boat operations requires cycling through the following seven steps.
C.7. Step 1	Defining the mission objective and tasks.

Risk Management Process, Step 2

C.8. Step 2: Identifying hazards

Identifying possible hazards to the boat and the crew. Hazards include anything that could go wrong with equipment, in the environment, or with the team.

- Equipment: Is the equipment functioning properly and can it be expected to function properly throughout the mission?
- Environment: How will the weather, sea conditions, proximity to shoals, vessel traffic, and available light affect the mission?
- People: Is the team properly trained and capable of handling the demands of the mission? Are they fatigued, complacent, or suffering from physical or mental stress?

C.8.a. Risk categories

To ensure that few hazards are missed, hazards must be discussed within the crew and between the coxswain and mission coordinator. Use these risk categories to facilitate discussion:

Risk Category	Description
Planning	Was there adequate time and information to develop a good plan? As the planning time increases and more information becomes available, the risk is reduced. As mission complexity increases, the time for planning should also increase.
Event Complexity	The mission is made up of a chain of events. How complex are these events? Do they require significant know-how to perform? Many routine events are complex. As the event requires more know-how and attention to perform correctly, the possibility that something could go wrong increases. Event complexity can be greatly increased by darkness, which in turn increases risk.
Asset Selection	Is the boat and this coxswain and crew best suited to perform this mission? Is the ready boat the right boat? The capability and readiness condition of the boat along with the qualifications, experience, and physiological condition (health and alertness) of the coxswain and crew must be compared to the event complexity and environmental conditions.

Risk Category	Description
Communications and Supervision	1. External communications and supervision - Will the boat be able to maintain good communications with the mission coordinator and other on scene units? Will the mission coordinator be able to provide real-time oversight of boat activities as a double check for safety? The less capable the communications, the higher the possibility that relevant information will not reach decision makers. Risk control may be less effective, double checks will be more difficult. 2. Communications within the boat - Can the crew hear orders over the ambient noise? Are they assertively communicating through accurate, bold and concise statements? 3. Supervision of the boat crew - Even if the boat crew is qualified to perform tasks, supervision by the coxswain can act as a control to further mini-mize risk. The higher the safety risk, the more the coxswain needs to be focused on observing and checking. When coxswains are actively involved in doing tasks, they can be easily distracted and should not be considered effective safety observers in moderate to high risk conditions.
Environmental Conditions	Are the current and forecasted conditions, in transit and on scene, within the capability of the boat and the crew? As the environment changes, risk controls need to be updated.

Risk Management Process, Step 3

C.9. Step 3: Assessing the risks

Risk is a function of the severity, probability and exposure.

- Severity describes the potential loss. Should something go wrong, what would be the injury or equipment damage.
- Probability is the likelihood that the consequences described above will happen.
- Exposure is the amount of time, people or equipment exposed to the hazard.

C.9.a. Risk categories

Each risk category must be examined in terms of severity, probability and exposure to arrive at a subjective rating of risk. Again it is useful to discuss individual perceptions of risk among the crew and between the coxswain and mission coordinator

Risk	Description
High Risk	• Risks cannot be managed with constant control. • Loss in terms of personnel injury or equipment damage is expected. • The boat and/or crew is operating beyond their capability. • Whether this risk is acceptable or not is dependent upon the mission objective. • High risk must be communicated to the mission coordinator. • An example is entering the surf zone with a utility boat.
Medium Risk	• Risks are manageable with constant control. • Loss is not expected if the situation remains stable, the crew adheres to all standard operating procedures, and boat systems respond as designed. • The boat and/or crew are operating at their capability

Risk	Description
Low Risk	• Risks are manageable with control as required. • Loss is not expected because the mission has established margins of safety in place and the objective will be modified if the margins are reduced. • The boat and/or crew are operating within their capability. • An example is transit of a familiar area at a safe speed during the day in good visibility with a full, qualified crew aboard.

Risk Management Process, Steps 4, 5, 6 & 7

C.10. Step 4: Identifying the options

Unnecessary risk has to be eliminated. What changes can be made to reduce risks to an acceptable level without changing the mission objective? This can be done by examining:

- changes to the planned optempo (ex. slowing),
- command and control (ex. more guidance and/or supervision),
- mission tasks (ex. Simplifying),
- timing of tasks (ex. Sequential vice concurrent or daylight vice night time),
- boat requirements (ex. More capable) or crew qualifications (ex. more experienced),
- number of assigned boats (ex. standby) and/or crew (ex. additional members),
- required equipment and/or protective equipment.

If the discussion of options is limited to those that can be provided by the boat, few are available. This step needs to evaluate the options the larger team can recommend to reduce risk. The larger team may have additional resources. The larger team may be able to spread out the risk among responders or transfer the risk to more capable assets.

C.11. Step 5: Evaluating the risk versus gain

Did the mission coordinator validate that the risk assumed by the coxswain is worth the mission objective? If risks seem unacceptable, can the mission objective be modified to reduce risk to an acceptable level.

C.12. Step 6: Executing the risk decision

This decision implements the best option given the risks and gains. In executing the decision, the crew is made aware of what the expected outcome should be.

C.13. Step 7: Monitor the situation

Did the action achieve the desired outcome? Are the risks within the mission changing? If so repeat, the steps to manage those risks.

Section D. Informal Crew Briefing and Debriefing

Overview

Introduction

Informal crew briefings are required before the boat gets underway. Briefings for the coxswain and the crew helps create a shared mental picture of what is expected to happen and sets rules for the mission.

Informal crew debriefs should be performed after most missions. The debrief is the best opportunity to evaluate performance and recognize individual and team accomplishment. **When correctly performed, the debrief can serve as a valuable tool for continuous improvement**. It can show the way from just 'doing things right' to knowing how to do 'right things right'

In this section

This section contains the following information:

Informal Crew Briefing

D.1. General	The informal crew briefing shall be comprised of the following topics.
D.2. Include the mission objective	Include the mission objective, known information and risks regarding the mission, and the planned course of action.
D.3. Specify duties and responsibilities	Be specific in assigning duties and responsibilities. Mission coordinator expectations should be understood by the coxswain and conveyed to the crew. Don't let the crew have to second guess what is needed to be done, or in special situations, how it should be done.
D.4. Establish positive climate for teamwork	Establish a positive climate for teamwork. The crew is encouraged to double check each other, point out errors, speak up when they have relevant information, and ask questions when they do not understand.
D.5. Discuss improvement goals	Restate the goal for improving one or two weak areas in crew coordination. This goal was generated from a previous crew debrief. Try to be as specific as possible in describing what is considered an improvement.

Informal Crew Debrief

D.6. General	The informal crew debrief shall cover the following topics.
D.7. Recap major events	Recap major events of the mission (e.g., preparations, transit, on scene operations).
D.8. Determine level of performance	Determine level of performance within key events. Key events include the crew brief, critical navigation segments of the transit, bar crossings, approaches to vessels, personnel transfers and other hazardous parts of the assigned mission.
D.9. What affected the outcome of events?	Have the coxswain and crew, and when possible the command, discuss what human behavior or risk decisions affected the outcome in these events. This discussion is for professional growth and learning. Discuss what behavior/decisions exceeded the Boat Crew Coordination Standards, and what behavior/decisions failed to meet Boat Crew Coordination Standards.
D.10. Has goal been met?	Determine if the goal to improve one or two weak coordination areas had been met.
D.11. Set new goals	Set, change, or affirm a specific goal for improving one or two weak areas in crew coordination. Goals are set or changed with the knowledge and guidance of the command.